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Patterns of Positive Readjustment in Vietnam Combat Veterans

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This study examines readjustment patterns in 152 Vietnam combat veterans. Subjects were nontreatment-seeking volunteers who felt that they had made an adequate life adjustment since Vietnam. Using a set of self-report instruments, data were obtained on background characteristics, military experiences (including combat), exposure to war trauma, current day PTSD symptomatology, and types of coping strategies. A subset of well-functioning veterans with substantial combat exposure was identified. Results indicated that these veterans suffered considerable distress during wartime but that they dealt with current recollections of this experience in a fashion that was significantly different from more symptomatic cohorts. Nonavoidant coping styles characterized the functioning of well-adjusted veterans; furthermore, type of coping strategy predicted current adjustment better than combat exposure. Implications of different approaches to coping are discussed, particularly as they relate to the long-term integration of traumatic war experiences.

KEY WORDS: adjustment; veterans; coping; military stressors.

INTRODUCTION

War is a well-recognized source of psychological trauma and many studies have focused on the long-term difficulties encountered by combatants in their readjustment to civilian life (Card, 1987; Kulka *et al.*, 1988; Laufer *et al.*, 1981; Wilson, 1978). A recent, comprehensive study has shown that 15% of male Vietnam theater veterans continue to suffer from posttraumatic stress disorder (PTSD) today (Kulka *et al.*, 1988; 1990). Rates

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of PTSD climb to nearly 36% when analyses are conducted on veterans with high levels of war-zone stress exposure, emphasizing the adverse impact of intense combat participation on subsequent adaptation.

Studies like the National Vietnam Veterans Readjustment Study (Kulka *et al.*, 1988, 1990) have helped direct attention to the treatment needs of underserved veterans. However, little is known about the majority of Vietnam theater veterans who, though exposed to war, do not suffer from combat-related PTSD. To date, there are minimal data on factors associated with more positive forms of readjustment or the variables that influence greater stress resistance after exposure to severe life stressors such as combat.

Data from a growing number of studies in nonveteran populations suggest there are several factors that may be associated with the ability to recover from exposure to severe stress or trauma. For example, Holahan and Moos (1987) found that self-confidence, easygoing disposition, and family support resources predicted psychological and physical resistance in civilians. Other factors including hardy disposition (Kobasa *et al.*, 1982), active approach to challenge (McCrae, 1984), and utilization of available family support (Figley, 1986) and social resources (Cohen and Wills, 1985; Kessler *et al.*, 1985; Thoits, 1985) also appear to play a role. Recent studies in the area of coping indicate that coping style, particularly the use of problem-focused (i.e., instrumental or action-based) strategies, is critically related to adjustment following a wide range of severe life stressors (Borus, 1973; Harel *et al.*, 1988; Lazarus and Folkman, 1984; Moos and Billings, 1982; Solomon *et al.*, 1991). In particular, coping skills involving active or approach-based behaviors have been shown to contribute to greater levels of stress resistance in a number of psychological and physical domains (Holahan and Moos, 1987; 1990). These findings have been replicated in studies of other civilian populations (e.g., Fondacaro and Moos, 1989; Kahana *et al.*, 1988; McCormack *et al.*, 1988), suggesting their broad applicability. Although there is some research linking higher levels of psychopathology and PTSD with a predominance of emotion-based coping in combatants (Fairbank *et al.*, 1991; Ford and Spaulding, 1978; Hendin and Haas, 1984; Nezu and Carnevale, 1987; Solomon *et al.*, 1988; Solomon *et al.*, 1989), few studies have addressed correlates of the positive adjustment of combat veterans in similar detail.

The primary purpose of the present descriptive study was to identify factors that may have contributed to positive readjustment in a group of heavily combat exposed Vietnam veterans. The study was designed to address some limitations in prior studies of military personnel and veterans which have typically relied on identified clinical samples (cf. Solomon *et al.*, 1989) and have used instruments derived largely from work with civilian

populations (cf. Green *et al.*, 1988). Consequently, the current study examined combat-related PTSD using a non-clinical group and a variety of combat relevant measures. It also attempted to improve the precision in measurement of stressor dimensions and the delineation of specific combat-related PTSD symptomatology.

A sample of male Vietnam theater veterans who described themselves as having made a positive adjustment since the Vietnam War served as participants. Associations among combat status, exposure to discrete trauma, attitudinal factors, and coping skills were investigated to determine how they relate to current patterns of adjustment.

METHODS

Subjects

Subjects included 152 community-based male volunteers all of whom responded to personal or written recruitment efforts seeking veterans who had adjusted adequately since the Vietnam War. Recruitment was restricted to theater combat veterans because of the demonstrated association between prior combat exposure and problems with psychological readjustment. The average age of participants was 40.8 years (SD = 3.28). Mean educational level before Vietnam was 12 years (SD = 3.64). Because random sampling was not used, certain background variables are not representative of the U.S. Armed Forces who served during that conflict (cf. Kulka *et al.*, 1988; 1990). In the present sample, for example, there is an overrepresentation of enlisted men who served in the Marine Corps (see Table I).

Procedure

Veterans were contacted via an extensive outreach network chaired by a group of local, prominent Vietnam veterans. Efforts were made to recruit veterans from a wide range of public and private employment sectors. A seven-page survey was mailed or hand delivered to veterans identified by the outreach network. To expand participation, surveys also were distributed to job locations where there was an interested contact persona and large numbers of veterans were known to be employed, e.g., fire houses. Despite these efforts, the project had a formal return rate of approximately 15% which reflects the fact that many surveys were never distributed directly to participants. Consequently, a more realistic rate is 32%, the number of personally delivered surveys that were completed.

Table I. Demographic Characteristics[a]

Categorical Variable	*n*	%
Marital Status		
Single	11	7.4
Married	118	79.2
Divorced	20	13.4
Branch		
Army	77	51.0
Navy	12	7.9
Air Force	12	7.9
Marines	50	33.1
Enlistment		
Drafted	24	16.4
Enlisted	122	83.6
Duty in Vietnam		
Combat	68	45.0
Combat Support	63	41.7
Service Support	20	13.2
Hollingshead Social Index[b]		
Category 1	13	8.8
Category 2	23	15.6
Category 3	63	42.9
Category 4	46	31.3
Category 5	2	1.4

[a] Note. Totals do not sum to 152 because of missing data for each variable.

[b] Hollingshead categories range from 1 to 5, with 1 representing professionals/executives and 5 designating unskilled labor and unemployment.

All participants received a follow-up letter thanking them for their assistance and offering information about study results and treatment referral opportunities.

Materials

Potential participants were contacted through intermediaries or by mail and the survey itself was intentionally brief, requiring only about 20 min to complete. Five sections were included:

Background Information

Items addressed current and past social, educational, and occupational status; participation in veterans organizations and affairs; duties in Vietnam; disability status; and questions about treatment for substance abuse, psychological, and medical problems. Also included were a reliable measure of combat exposure (Keane *et al.*, 1989) and the two-factor Hollingshead Index (Hollingshead and Redlich, 1958) which classifies current socioeconomic status based on educational and occupational achievement.

Perceptions and Attitudes of Postwar Adjustment

A series of Likert-type statements assessed veterans' attitudes and perceptions of their postwar personal adjustment (e.g., "I use what I learned from my Vietnam experiences to help me deal more effectively with my life"). Items had been previously evaluated for content validity on a pilot sample of eight combat veterans.

Abbreviated Mississippi Scale for Combat-related PTSD

This scale represented an 11-item version of the full Mississippi Scale (Keane *et al.*, 1988). Items were chosen for inclusion on the basis of high factor loadings (>.50) on a principal components analysis of the larger scale (cf. Keane *et al.*, 1988) and for their representation of major DSM-III-R symptom criteria for the disorder (APA, 1987). Correlations were calculated between the total score on mini-Mississippi items and the full scale score using an independent sample of carefully diagnosed PTSD veterans and well-adjusted Vietnam theater veterans (n = 28). A correlation of .90 indicated a suitably high level of comparability between the two formats.

Traumatic Events Questionnaire

Participants first selected their most traumatic wartime event and then rated levels of past and present distress experienced in recalling the incident using a 5-point Likert scale. Participants also reviewed a detailed series of descriptors and marked those which applied to their event (e.g., seeing a buddy killed or wounded). The total set of ratings was included so that events could be classified into categories potentially related to adjustment (e.g., life threat; responsibility/guilt).

Coping Skills Questionnaire

A shortened (21-item) version of the revised Ways of Coping questionnaire (WOC-R; Folkman & Lazarus, 1980) was developed, with some minor wording modifications for use with combat veterans. Items were chosen that showed high item-total correlations and represented factors previously derived with the full scale (Folkman and Lazarus, 1980). Participants rated the extent to which they currently employed a variety of coping strategies in dealing with recollections of the traumatic war event.

RESULTS

The large number of dependent variables was reduced to a working subset by means of four principal components analyses applied to perception-attitudinal items; the mini-Mississippi Scale; traumatic event descriptors; and coping items. Varimax rotation was conducted, with the number of rotated factors determined by a combination of eigenvalues greater than 1.0 and Scree criteria. Four orthogonal factors were identified for each of the four instruments on this basis (please see Table II). Items loading at .50 or greater were selected, and factor scores were then computed using Gorsuch's (1974) approximation procedure which assigns a constant weight of one to selected items and sums them. These analyses were conducted to identify representative variables and reduce the likelihood of experiment-wise error rate.

Initially, a stepwise regression analysis was conducted to determine which variables were associated with current PTSD symptomatology as measured by the mini-Mississippi total score. The overall model was significant ($F(3, 141) = 30.91, p < .001$). Individual predictors were significant at the .001 level, accounting for 26% (mental escapism/externalization), 9% (combat exposure), and 5% (negative perceptions of the war experience) of the total variance, respectively.

High/Low Combat

The sample was then divided into subsets on the basis of previously established combat exposure classifications (Keane *et al.*, 1989). A series of one-way analyses of variance (ANOVAs) comparing the extreme groups indicated that high and low combat exposed subjects were not significantly different on most demographic variables (e.g., age, education, marital status, Hollingshead index, enlistment status, length of employment) although there was a trend for high combat veterans to have suffered more physical disability from the war. By contrast, the groups differed significantly

Table II. Factor Descriptions for Survey Instruments

Scale	Factor Number and Label	Variance Component
I. Perceptions/attitudes	1. Perceived value of the Vietnam experience	21.5
	2. Perceived residual maladjustment from Vietnam	16.7
	3. Perceived impact of Vietnam on adjustment	14.1
	4. Importance of support resources to adjustment	12.6
II. Mini-Mississippi Scale	1. Startle and intrusive recollections	29.4
	2. Withdrawal and explosiveness	12.8
	3. Feelings of reliving and numbing	9.8
	4. Guilt and disturbed sleep	9.3
III. Traumatic event Descriptors	1. Generic characteristics of battle (e.g., anticipation of battle)	26.8
	2. Discrete traumatic war events (e.g., seeing a buddy killed)	10.6
	3. Situational effects not specific to war (e.g., boredom; feeling sick)	7.7
	4. Feelings of personal impact and responsibility (e.g., leadership failure)	6.7
IV. Coping Inventory	1. Mental escapism and externalization	24.5
	2. Positive acceptance/optimism	11.0
	3. Extreme behavioral avoidance and distraction	8.6
	4. Active cognitive/verbal analysis of the event	6.5

on a number of post-war adjustment variables (see Table III). Specifically, high combat veterans indicated greater difficulty dealing with anniversary reactions and in having more feelings of adversity related to Vietnam. They also scored significantly higher on mini-Mississippi total scores, although greater scores were found only for mini-Mississippi factors 1 and 3 which tap dimensions of startle response/intrusive recollections and reliving experiences/numbness. In rating traumatic war events, veterans with high exposure also rated both past and current distress as significantly greater than lower exposed cohorts. Veterans with low combat exposure endorsed significantly more generic characteristics of battle (Event Factor 1) and specific war events (Event Factor 2) than high combat veterans. Finally, there was a trend towards greater endorsement of cognitive analysis of the event (Coping Factor 4; $p < .06$) by high combat veterans; however, no other coping skills differentiated the high and low combat groups.

Table III. Comparison of High versus Low Combat Groups on Psychometric Variables

Variable	High Combat		Low Combat		
	M	SD	M	SD	*F*
Anniversary reactions	2.6	1.6	2.0	1.3	7.39**
Feelings of adversity	4.1	1.2	2.9	1.1	38.29***
Mini-Mississippi Total[a]	31.6	6.6	28.3	6.1	9.58**
Startle/intrusive recollections	8.2	2.8	7.2	2.3	6.77*
Withdrawal and explosiveness	9.1	1.9	9.1	1.8	<1.0
Reliving/numbing	8.8	1.7	7.9	1.7	9.58**
Guilt/disturbed sleep	6.4	2.0	6.8	2.1	1.10
Past distress rating of war event	4.3	0.8	3.7	1.0	17.69***
Current distress rating of war event	3.2	1.3	2.3	1.2	17.48***
Generic characteristics of battle	8.2	1.7	9.1	1.3	12.57***
Discrete traumatic war events	7.6	1.5	8.6	1.6	14.50***

[a] Mini-Mississippi means extrapolate to full scale scores of 101 and 89 for the high and low combat groups, respectively.

*$p < .05$.

**$p < .01$.

***$p < .001$.

Combat/PTSD Subsets

Characteristics of heavily exposed veterans were examined in more detail by dividing subjects into four groups using median splits for high/low combat (based on the combat exposure measure) and high/low PTSD symptomatology (based on mini-Mississippi scores): High Combat/High PTSD (HH; $n = 43$), High Combat/Low PTSD (HL; $n = 33$), Low Combat/High PTSD (LH; $n = 31$), and Low Combat/Low PTSD (LL; $n = 44$). These groups were then contrasted using a series of one-way ANOVAs (see Table IV) from which all statistically significant effects were isolated using Duncan's test ($p < .05$) for pairwise comparisons. This analytic format was selected over a 2 × 2 ANOVA because of the primary interest in cell comparisons rather than main-effects or interactions addressed by omnibus ANOVAs.

As expected, both high combat (HH & HL) groups had significantly higher levels of combat exposure than low exposed veterans (see Table IV). In addition, combat exposure in the LH group statistically exceeded that of the LL group, although both would be classified in the light-moderate range. The high combat groups demonstrated higher current educational level than the low combat groups and the high combat, low symptom (HL) group scored at a significantly higher level of occupational achievement than all other groups. The LH group had a significantly lower SES rating than any other group based on the Hollingshead Social Index. There were no other significant differences on background measures.

Analyses of current levels of PTSD symptomatology, indexed by the mini-Mississippi total score, revealed that the HH group scored significantly higher than the other three groups, with LH veterans scoring higher than either HL or LL subjects. High past levels of distress over traumatic events were reported by all groups except LL subjects, who reported only moderate distress. Ratings for current distress over the event showed the HH group reporting the highest levels and both the HL and LH groups reporting more distress than the LL group. When difference scores were calculated for changings in ratings of distress from past until present, both low symptom groups (LL and HL) showed greater positive change (i.e., improvement) than the HH subjects.

Finally, veterans' endorsement of coping strategies in the current management of these events was assessed using the four factors described earlier. The two high symptom groups reported using significantly higher levels of mental escapism and externalization (Coping Factor 1) and extensive behavioral avoidance (Coping Factor 3) than either of the two low symptom groups. There were no other significant differences.

DISCUSSION

This study used both combat status and current PTSD symptomatology to classify a group of community-based Vietnam theater veterans. When subjects were divided solely according to combat exposure, heavily exposed combatants revealed greater post-war difficulties, confirming the widely recognized relationship between combat exposure and the development of PTSD in veterans (Kulka *et al.*, 1988; 1990). When subjects were classified by both exposure and symptom status, however, other findings emerged, specifically the existence of a subset of heavily combat-exposed, Vietnam theater veterans with relatively favorable post-war adjustment as evidenced by a variety of vocational, educational, and psychological symptoms measures. Furthermore, this group demonstrated the largest positive gain in reduction of war-related distress, suggesting that recovery from high levels of combat exposure follows a number of different paths.

Neither the degree of combat exposure nor delineated war-zone stressors were the strongest predictors of veterans' current functioning in this study. Instead, a variable reflecting detrimental coping strategies was the strongest single predictor. Veterans who endorsed externalization, wishful thinking, and extreme avoidance were significantly more symptomatic than those who relied on more active forms of coping. This finding is consistent with work by a variety of investigators (Fairbank *et al.*, 1991; Lazarus and

Table IV. Comparisons of Sample Subsets on Psychometric Variables

Variables	1. High Combat/ High PTSD M (SD)	2. High Combat/ Low PTSD M (SD)	3. Low Combat/ High PTSD M (SD)	4. Low Combat/ Low PTSD M (SD)	*F*	Group Differences
Combat Exposure Scale	31.6 (5.7)	29.0 (5.1)	15.2 (5.2)	9.8 (6.6)	135.5***	1,2 > 3,4 3 > 4
Hollingshead Social Index	2.9 (1.0)	2.8 (0.9)	3.5 (0.6)	3.0 (1.0)	4.2**	3 > 1,2,4
Educational	15.6 (2.6)	16.0 (2.6)	13.8 (2.5)	14.5 (2.9)	4.8**	2 > 3,4 1 > 3
Occupational achievement	26.6 (11.2)	31.3 (7.8)	25.9 (9.5)	23.7 (9.5)	3.7*	2 > 1,3,4
Mini-Mississippi total	36.6 (4.8)	25.7 (2.5)	33.6 (3.0)	23.8 (3.9)	102.4***	1 > 2,3,4 3 > 2,4
Past distress rating of war event	4.5 (0.7)	4.2 (0.9)	4.1 (0.8)	3.2 (1.0)	17.1***	1,2,3 > 4

Current distress rating of war event	3.6 (1.2)	2.5 (1.1)	3.0 (1.1)	1.8 (0.9)	22.4***	1 > 2,3,4 2,3 > 4
Past/current distress rating change	0.8 (1.0)	1.6 (0.9)	1.1 (1.2)	1.5 (1.1)	4.5**	2,4 > 1
Mental escapism/externalization	8.8 (4.2)	4.0 (3.7)	8.4 (4.1)	4.4 (4.4)	14.3***	1,3 > 2,4
Positive acceptance/optimism	5.9 (2.9)	6.0 (3.2)	6.7 (2.4)	5.2 (3.6)	1.4	
Behavioral avoidance/distraction	7.4 (2.7)	5.8 (3.4)	7.6 (3.2)	5.3 (3.8)	4.7**	1,3 > 2,4
Cognitive/verbal analysis of event	4.1 (2.6)	3.4 (2.5)	3.3 (1.8)	3.0 (2.3)	1.8	

*$p < .05$.
**$p < .01$.
***$p < .001$.

Folkman, 1984; Moos and Billings, 1982) which suggests the centrality of coping and appraisal processes in recovery from extraordinary stress, beyond the contribution of other factors (e.g., age, gender, cultural background; see Gibbs, 1989 for review; McCrae, 1984).

Some research data suggest that the effectiveness of problem-focused, positive forms of coping relates in part to increased feelings of emotional and cognitive mastery over the stressor event. This mastery may be associated with forms of cognitive reanalysis or reframing which facilitates individual reappraisal of the event (Grady *et al.*, 1989). Several authors (Conway and Ross, 1984; Taylor and Brown, 1988) have found that selective reanalysis and positive appraisal in the face of adversity promotes mental well-being by limiting exposure to discrepant or otherwise distressing cognitions. Ford and Spaulding (1978), for example, studying military personnel after the USS Pueblo incident, noted that soldiers with better post-incident adjustment employed greater levels of denial and rationalization and evidenced less dependent, help-seeking behavior. Green *et al.* (1988) observed increased levels of outer-directedness, ability to focus on current living, and sublimation in Vietnam veterans who were more successfully readjusted, a result similar to that found by Fairbank *et al.*, (1991) in work with repatriated POWs. All of these findings are consistent with the present study where positive reappraisal, reanalysis, and active coping were associated with a number of parameters suggesting enhanced well-being.

Other results warrant mention. Despite indications of generally positive readjustment, some responses by better adjusted subjects suggest residual effects of their exposure to combat. On the mini-Mississippi Scale, qualitative analysis of individual items revealed that HL subjects frequently endorsed the presence of emotional distancing, startle, and disturbed sleep at a level equivalent to "at least some of the time" or greater. Thus, some war-related experiences may remain problematic even if overall adjustment is favorable. It is also noteworthy that this study identified a group of veterans (LH) exposed to considerably lower levels of combat who continue to struggle with readjustment. These subjects tended to endorse more general and specific descriptors of their most traumatic event than did the heavily combat exposed veterans. This suggests that factors influencing adjustment in combatants under lower magnitude stressors may require special consideration (Cohen and Wills, 1985; Holahan and Moos, 1991), a situation not widely addressed.

Several methodological issues should also be noted. First, the rate of return in this study was relatively low. Various factors are likely to have played a role including the fact that participants were not reimbursed for their efforts. Furthermore, numerous veterans expressed concerns about

responding to a survey conducted by the government, despite assurances of research confidentiality. On-site contact by the first author helped remedy this problem in some cases. In terms of diagnostic findings, the proportion of veterans classified as better adjusted in this study falls well below percentages obtained in the National Vietnam Veterans Readjustment Study, i.e., 56% vs. 73.7% (using combined full and partial prevalence rates; Kulka *et al.*, 1988; 1990). These discrepancies reflect differences in sampling and the scope of assessment and classification procedures used in the two studies. Diagnostic assessment methods in the current study were intentionally circumscribed and do not represent the comprehensive, multidimensional measurement typically required for more rigorous diagnosis of PTSD (Wolfe and Keane, 1991). Nonetheless, the percentages obtained for better adjusted combatants are comparable to those found in samples of World War II ex-POWs exposed to significant war trauma (Zeiss and Dickman, 1989) and in other surveys of Vietnam veterans (Green *et al.*, 1988) where the focus was intentionally descriptive rather than epidemiologic.

This study also did not investigate the degree to which intervening life events influenced current readjustment. Dohrenwend and Shrout (1985) have described a process of "circular proneness" whereby intervening stressors adversely impact coping, often leading to decreased capability in handling subsequent life events. Examination of variables such as intervening life stressors and their relationship to coping resources will further inform the important study of patterns of postwar adjustment in Vietnam veterans.

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